detailed descriptions of *Geotrygon* and *Zentrygon* courtship behaviour to provide more robust results.

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Recent observations of White-eyed Starling *Aplonis brunneicapillus* on Guadalcanal, Solomon Islands

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White-eyed Starling *Aplonis brunneicapillus* is a poorly known Solomon Islands endemic. Since its description, based on a single male specimen from Buin, Bougainville (Danis 1938), additional records have come from Choiseul, Rendova and Guadalcanal (Amadon 1943, Beecher 1945, Cain & Galbraith 1956, Gibbs 1996, Dutson 2011). However, there have been very few recent records, with all of those in the last decade at Mt. Austen on the outskirts of Honiara, Guadalcanal, where 1–5 birds were seen on *c.*25% of visits in 1990–2010 (G. Dutson *in litt.* 2014). The species is potentially threatened by the ongoing felling of nest trees to eat the young, combined with high rates of habitat degradation and deforestation

Figure 1. White-eyed Starling *Aplonis brunneicapillus*, Guadalcanal, Solomon Islands, July 2013, showing characteristic features including white iris and distinctively shaped tail streamers that help separate this species from Metallic Starling *Aplonis metallica* (Ashley Banwell)

Figure 2. White-eyed Starling *Aplonis brunneicapillus*, Guadalcanal, Solomon Islands, July 2013 (Ashley Banwell)

Figure 3. White-eyed Starling *Aplonis brunneicapillus* carrying nesting material, Guadalcanal, Solomon Islands, July 2013 (Markus Lagerqvist)

Figure 4. White-eyed Starling *Aplonis brunneicapillus*, Guadalcanal, Solomon Islands, July 2013 (Markus Lagerqvist)

(BirdLife International 2012). Thus, given the general paucity of records and a probably small, fragmented and possibly declining population estimated at 1,000–2,499 individuals, *A. brunneicapillus* is currently treated as Endangered (BirdLife International 2012).

On 12 July 2013 a nesting colony of *A. brunneicapillus* was discovered by the authors, and our local guides, along the upper reaches of the Tenaru River, North Guadalcanal (09°35.588′S, 159°58.781′E; 500 m). We observed and photographed (Figs. 1–4) the starlings for *c.*10 minutes. The colony was in the crown of a tall emergent tree atop a steep, forested

ridge above a stream. The tree appeared to be dead or dying, and was festooned with epiphytic ferns and mosses. We estimated that 10–15 birds were present, but probably more; bad light and the distance made counting difficult. Individuals and pairs appeared to use regular perches, with frequent visits to presumed nests sited in the dense epiphytic ferns. Several birds were carrying nesting material, chiefly 'strings' of moss (Fig. 3). Many individuals appeared to have broken or reduced tail streamers. We also observed what appeared to be courtship, with the displaying individual pointing the tail vertically upwards, before thrusting it downwards toward the other bird. Further downstream (09°35.815'S, 159°58.280'E; 481 m) on the same date, we encountered another flock of *c.*20–30 starlings flying along a forested ridge, before perching in the dense canopy of a tall tree. Four or five *A. brunneicapillus* were visible, but we cannot exclude the possibility that other species were present in the flock. The birds appeared to be feeding on small fruit and there was no indication that this was a nesting tree. Despite spending four days within the species' known altitudinal range, these were our only records. We were unable to confirm whether local people still fell nesting trees to eat the young.

Discussion

Our record appears to constitute only the third breeding colony of *A. brunneicapillus* and to be the first since the discovery of one near Kieta, Bougainville, in 1985 (Kaestner 1987). Our observations on choice of nest tree, colony size and behaviour, including possible courtship, closely mirror the detailed notes of Cain & Galbraith (1956) and Kaestner (1987). However, the Bougainville colony was apparently in lowland forest, whereas the Guadalcanal records, including ours, were in hill forest. Due to the reports of predation by local people (Cain & Galbraith 1956) and a subsequent lack of records by more recent visitors (Gibbs 1996; G. Dutson pers. obs. 1997), it was suggested that the species may have been extirpated around Betilonga (BirdLife International 2012), even though Cain & Galbraith (1956) stressed that they spent almost one month there before detecting it. Our records confirm its continued presence in this area.

Several additional factors may contribute to the apparent rarity and possible decline of *A. brunneicapillus*. Deforestation and absence of old trees might place a constraint on continued survival in the lowlands, although the species is also tolerant of somewhat disturbed habitats, including native gardens (Beecher 1945, Gibbs 1996). In addition to deforestation, possible threats include competition with congeners and predation by introduced mammals. Competition with other starlings, including the closely related Metallic Starling *A. metallica* may have caused declines, possibly induced by deforestation and habitat alteration. According to taxon-cycle theory, island species undergo successive stages of expansion and contraction, with recent colonisers occupying disturbed lowland habitats, gradually replacing older relictual taxa, whose ranges will retreat to interior hill and montane forest (Wilson 1959, Wilson 1961, Ricklefs & Cox 1972). Thus, in cases where closely related taxa co-occur on an island, they are expected to segregate by habitat and / or altitudinal distribution, and the morphological space occupied. A recent study has found support for patterns of range expansions and contractions, with significant segregation in habitat, elevation and morphological space among sympatric insular taxa of *Pachycephala* whistlers (Jønsson *et al.* 2014). Given similar patterns of range size variation in *Aplonis* starlings, with some species being widespread across large archipelagos, others highly disjunct or restricted to single, montane islands, it is conceivable that similar processes could be at work in the range dynamics of these starlings.

A potentially analogous situation to that of *A. brunneicapillus*, could be that of Yellow-eyed Starling *A. mystacea* in New Guinea. This species is also widespread, but is

decidedly rarer and less frequently encountered than the sympatric *A. metallica* and Singing Starlings *A. cantoroides*. Susceptibility to avian pathogens may also contribute to increasing replacement of *A. brunneicapillus* by species such as *A. metallica*. It has been suggested that sympatry of ecologically similar species may be inhibited when parasites are less virulent in widespread, recent colonisers (e.g. *A. metallica*) but are pathogenic in localised endemics (e.g. *A. brunneicapillus*) that possibly lack recent exposure to the parasites concerned, thus potentially tipping the balance in favour of one species (Ricklefs & Bermingham 2007, Ricklefs 2010, 2011). Introduced mammals, including rats and cats, may pose an additional threat, not only to this species, but other indigenous taxa. Finally, *A. brunneicapillus* may primarily be restricted to hill forest, a habitat rarely visited by ornithologists due to access problems. Recent records of small numbers in mixed starling flocks such as those recorded on Mt. Austen, may relate to stragglers from nearby hill forest rather than residents. However, records of a nesting colony on Bougainville suggest that lowland forest is appropriate habitat and that it is deforestation that has wrought a significant population decline in such areas.

These recent records indicate that significant numbers of *A. brunneicapillus* may survive in hill forest on Guadalcanal, and possibly on other islands within its range, including those from which it is currently unrecorded. *A. brunneicapillus* has a unique geographical range, with no other bird taxon being confined to the same set of islands. Hence, establishing if the species is truly absent on islands from which it is so far unrecorded would be of great interest. Further surveys are required to assess population size of this and other poorly known species in the mountains of Guadalcanal and the Solomons in general.

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